

Name: \_\_\_\_\_ TP: \_\_\_\_\_

Failure to show work on all problems or use complete sentences will result in a LaSalle.

✧ For problem numbers 1 and 2, you must GRASP them on a separate piece of graph paper. This piece of paper should have problem 1 on the front and problem 2 on the back. Use your classwork to help guide you through the process.

★ USE GRASP OUTLINE FROM HW 36 ★

1) Starting at a height of 4 feet, a ball is thrown vertically upward with an initial velocity of 25 feet per second.

a. Write a function that demonstrates the height of the ball after  $t$  seconds:  $h(t) = -16t^2 + \underline{\hspace{1cm}}t + \underline{\hspace{1cm}}$

b. What is the height of the ball at 3 seconds?

c. When does the ball reach its maximum height?

d. What is the maximum height of the ball?

e. How long does it take the ball to reach the ground?

2) Maria throws a shot put with an initial velocity of 25 feet per second. She releases it at a height of 5 feet.

a. Write a function that demonstrates the height of the shot put after  $t$  seconds.

b. What is the height of the shot put at 1 second?

c. Find the time the shot put is in the air.

d. What is the maximum height of the shot put?

e. How long does it take the shot put to reach its maximum height?

Mixed Review (Do not GRASP! Solve Mixed Review on this sheet.)

3) What is the sum of all values for  $x$  that satisfy the equation: *Factor*

$$x^2 - 3x - 54 = 0$$

$$\frac{x}{x} \quad \underline{\hspace{1cm}}$$

4) Write the formula for the quadratic equation that has the following factors: *F.O.I.L or BOX*  
 $(x-5)(3x+6)$

5) What are the solutions to: *square root!*

$$3x^2 - 9x = 0$$

6)  $(n-5)(n+4)=?$  *F.O.I.L or BOX*

PUSH IT TO THE LIMIT.

Name: \_\_\_\_\_ TP: \_\_\_\_\_

HW#38: Complex Exponents  
Geometry FORM A  
Due Date: Monday, November 19<sup>th</sup>, 2012

Failure to show work on all problems or use complete sentences will result in a LaSalle.

For problem 1, you must **GRASP** it on a separate piece of graph paper.

1) For the period 1997 – 2003, the number of eggs  $y$  (in billions) produced in the United States can be modeled by the function  $y = -0.27x^2 + 3.3x + 77$  where  $x$  is the number of years since 1997.

- What is the maximum amount of eggs produced?
- At what year was the maximum amount of eggs produced (hint: remember,  $x$  = the number of years SINCE 1997)?
- How many eggs were produced in 2000 (hint: remember  $x$  = the number of years since 1997)?

2) What is the value of  $b$  in the expression below:

$$(x^{b+4})^2 = x^{46}$$

$$\textcircled{1} 2(b+4) = 2b + 8$$

$$\textcircled{2} 2b + 8 = 46 \quad \textcircled{3} 2b = 38$$

$$\begin{array}{r} 2b + 8 = 46 \\ -8 \quad -8 \\ \hline 2b = 38 \\ \hline b = 19 \end{array}$$

- ① power to power
- ② set exponents equal to each other
- ③ solve

3) Simplify:  $4^0 - 4^1 + 4^{-1} + 4^0$ .

$$a^0 = 1$$

$$a^{-2} = \frac{1}{a^2}$$

$$4) \frac{8(g^4h)^5}{(2g^6h^5)^3}$$

- ① power to power in numerator
- ② power to power in denominator
- ③ Quotient Law

$$5) \frac{10(g^2h^3)^6}{(3gh^3)^3}$$

\* See #4

6) Simplify:

$$2x^{-1} \cdot 4x^{-3}y^3 \cdot 2x^4y^{-1}$$

- ① Convert Neg. Exp.
- ② Simplify

$$\textcircled{1} \frac{2}{x} \cdot \frac{4}{x^3} \cdot \frac{y^3}{1} \cdot \frac{2x^4}{1} \cdot \frac{1}{y}$$

②

7) Simplify:

$$4a^{-1}b^4 \cdot 2a^2$$

\* See #6

8) Simplify:

$$\frac{2xy^4}{xy \cdot 4yx^2}$$

\* Division / Quotient Law

9) Simplify:

$$\frac{(f^3 \cdot w)^2 \cdot (f^4 \cdot w^6)}{(f^4 \cdot w^9)}$$

- ① power to power
- ② Mult. Law
- ③ Quotient Law

PUSH IT TO THE LIMIT.

Mixed Review	
10) What is the quadratic equation with solutions $x = 11$ and $x = -14$ ? $( \quad )( \quad )$	11) Find the solutions to the quadratic equation: $(x - 8)^2 = 25$ square root!
12) What are the solutions to: $5x^2 - 5 = 0$	13) $(5n-6)(3n+7)$ F.O.I.-L or BOX
14) What is the <u>sum</u> of <u>all values</u> for $x$ that satisfy the equation: $x^2 - 9x + 18 = 0$ ① factor ② solve twice ③ Add	15) Write the formula for the quadratic equation that has the following factors: F.O.I.-L or BOX $(6x-7)(2x-3)$
16) What are the solutions to: $x^2 - 5x = 0$	17) $(3n-5)(n+7) = ?$

PUSH IT TO THE LIMIT.